

October 25, 1946

Dear Jacques:

I have waited, hoping that I would hear from you first, but apparently that is not to be. I have been meaning, actually, to write to you for the last few weeks but kept putting it off, hoping that I would hear from you.

What prompts me to write at this particular moment is the fact that I saw van Niel yesterday, on his way to California from Princeton. He told me a little about the lecture that he gave at Princeton on the kinetics of bacterial growth, and I know you will be pleased to learn that he based it almost entirely upon your work. As a matter of fact, Linus Pauling, who was present at the lecture, after it was all over went up to van Niel and told him that he thought he had been delivering a "Monodlogue". (This is a pun. If you don't get it, let me know and I'll explain it in my next letter.)

The work here has been getting on a little more rapidly in the last few weeks than previously. We have not progressed very far in identifying the adaptive stimulating agent. We have found that extraction in the presence of citrate apparently gives more active preparations which is suggestive of the possibility that it may be a desoxyribose-nucleic-acid-containing compound since citrate inactivates desoxyribonuclease. This, of course, is as yet a very slim lead and, personally to me, a bit disappointing since it is getting to be rather monotonous to find biological activity concentrated in this fraction. One other thing of interest. We have attempted to test the theory that I proposed at the Cold Spring Harbor Symposium by trying to adapt a cell to an enzyme which it could not use. So far as the theory is concerned, it should not make any difference whether the enzyme was actually being used or not, the only criterion being that some combination of enzyme and substrate take place. We have gotten an apparently clear-cut answer in the case of maltose adaptation. As you know, maltose is not fermented by yeast at pH 7.2 and above. We found, however, that the enzyme could be formed at that pH. We are now investigating this more thoroughly, attempting to find in particular how much substrate was combined with enzyme at the higher pH.

We have also repeated your experiments, using yeast, on the effect of increasing maltose concentrations on the rate of adaptation. Except for a difference in the range of the effective concentrations, our results are quite identical. We are trying to examine this entire phenomenon fairly carefully at different pHs in view of the fact that we have found that the optimal concentration for maximal fermentation rate of maltose shifts with pH; for example, at pH 4.5 it is 1.5% maltose whereas at pH 6.5 it has shifted to 4% maltose.

Well, so much for actual laboratory doings. I have not as yet finished my review but still intend to send it to you as soon as it is done. Affairs at the University were quite complicated politically when I returned, and I spent a good deal of time trying to straighten things out here. They are now in a relatively satisfactory state. I have also been attempting to get the Lindgrens to combine interests once more with us in view of the fact that I need a lot of genetically negative strains to test our "transforming" substance, and he has agreed to collaborate with our group on this problem.

I am going next week to Washington to attend a high-powered conference which has a very peculiar origin. Some of the topmost physicists, which includes Bohr, Einstein, Fermi, von Neumann, Schrodinger, and quite a few others, have decided to turn their attention to biology and they, therefore, arranged this conference to which they invited about six biologists, including Beadle, Muller, Cori, myself, and about two others. The purpose of the biologists apparently is to give a highly condensed account of what is going on in modern biology, so as to bring our physical colleagues up to date. I don't have much hopes that too much of an original nature will arise from the conference but it should be interesting in any case. My major purpose in accepting was to see so many high-powered brains all collected in one room and presumably thinking about the same things.

I will write you the results of this interesting experiment if anything of interest comes out of it.

Please write to me and tell me what you are doing and what Andrew is doing. Has he been "pursued" to come back to the States for a while? I recall there was some talk about that last summer. Also, if you have any news concerning the maneuverings and manipulations concerning myself, please let me know. Remember, I am spending a lot of time and effort trying to learn French and I don't want to waste it.

Please remember to give my regards to Andrew and Boris should you see him. I understand that Brachet is at the Institute in Rapkines' laboratory. Say hello to him for me also and tell him that I have been having a very good time with Wiam. John Reiner, who is standing right beside me, also sends regards.

Tell Boris that I intend writing him in the near future, if not sooner.

See you in Paris next summer, I hope.

Yours,

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